

Effective masses of holes in...

S/181/63/005/001/054/064  
B104/B186

are obtained for the cyclotron parameters. The values of A, B, and N measured for Ge satisfy these conditions at  $B < 0$  and  $N < 0$ . The values of the cyclotron parameters measured for non-deformed Si crystals (G. Dresselhaus et al., Phys. Rev., 98, 368, 1955; R. N. Dexter et al., J. Phys. Chem. Sol., 20, 281, 1961) fulfill the conditions at  $N < 0$  whichever the sign of B. Results obtained for deformed Si crystals do not fulfill the conditions. This is explained by a change in cyclotron parameters on deformation.

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S. I. Vavilova,  
Leningrad (State Optical Institute imeni S. I. Vavilov,  
Leningrad)

SUBMITTED: September 14, 1962

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S/181/63/005/001/055/064  
B104/B186

AUTHOR: Shtivel'man, K. Ya.

TITLE: Effect of non-parabolic bands on the hole mobility in germanium and silicon

PERIODICAL: Fizika tverdogo tela, v. 5, no. 1, 1963, 350-352

TEXT: The role played by non-parabolic valence bands in hole mobility was studied to explain why the hole mobility in Ge and Si at room temperature is inversely proportional to  $T^{2.3}$  ( $T$  is the absolute temperature). The assumption that an increase in hole mass with increasing energy (temperature) causes a decrease in hole mobility is based on a simple theory in which only carrier scattering by long-wave acoustic lattice vibrations is considered. In germanium this decrease in hole mobility can be neglected, not so in silicon. If the effective mass  $m$  in the relation  $\frac{1}{\mu} \sim m^{5/2} T^{3/2}$  (1) is replaced by the averaged mass  $\bar{m}(\epsilon) = \bar{m}(\Delta)(\epsilon/\Delta)^{0.3}$ , then (1) agrees approximately with the relation  $1/\mu \sim T^{2.3}$  determined experimentally.  $\Delta$  is the spin-orbit splitting of the bands. Better agreement is reached in the

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Effect of non-parabolic bands...

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case of non-parabolic bands by taking the changes of other parameters into consideration (effective mass of state densities, etc.).

SUBMITTED: September 17, 1962

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L 30094-66 EWT(1)/EWT(m)/EMP(t)/ETI IJP(c) AI/ID

ACC NR: AP6012495

SOURCE CODE: UR/0181/66/008/004/1262/1263

AUTHORS: Baryshev, N. S.; Shtivel'man, K. Ya.

ORG: none

TITLE: Mobility of electrons in p-InSb

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1262-1263

TOPIC TAGS: indium compound, antimonide, electron mobility, photomagnetic effect, carrier density, hole mobility, phonon drag

ABSTRACT: The authors investigated the dragging of minority carriers in crystals by the majority carriers in p-InSb. The mobility of the electrons was determined by the photomagnetic effect using several samples, of which two were pure enough for the theory of the dragging effect to be applicable ( $7 \times 10^{13}$  and  $1.2 \times 10^{14} \text{ cm}^{-3}$  hole density at liquid-nitrogen temperature). The measured electron mobilities in these samples were  $2.7 \times 10^5$  and  $1.9 \times 10^5 \text{ cm}^2/\text{v-sec}$  at 100K, and since the compensation of the acceptors was negligible in these samples the hole mobility was high. A theoretical estimate of the mobility of the electrons with allowance for their scattering by phonons, by ionized acceptors, and by holes yields in this case values which are approximately twice the experi-

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ACC NR: AP6012495

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mental values. The authors show by means of rough estimates that this discrepancy can be attributed to dragging, which increases by three orders of magnitude the contribution made to the scattering of electrons by light holes. Although more accurate calculations are needed for a reliable determination of the law of dragging of electrons by holes, it is concluded that the dragging effect is quite strong and that the effective mass of the light holes amounts to approximately  $0.015m_0$ . The authors thank I. M. Dykman, N. N. Grigoriyev, and A. G. Samoylovich for a useful discussion.

SUB CODE: 20/ SUBM DATE: 27Sep65/ ORIG REF: 003/ OTH REF: 005

Card

2/2 CC

SHTIVEL'MAN, M.G. [Shtivel'man, M.H.]

Some problems in the formation of inhibition in young children. Nauk.  
zap. Nauk.-dosl. inst. psikhol. 11:229-230 '59. (MIRA 13:11)

1. Institut psikhologii, Kiyev.  
(Inhibition)

KAMENEV, Nikolay Nikolayevich, inzh.; BYZEYEVA, L.A. [translator];  
MERLIS, V.M. [translator]; ~~SHITVEL'MAN, N.M.~~ [translator];  
SAZONOV, A.G., inzh., red.; ~~MEDVEDEVA, M.A.~~, tekhn.red.

[Converting steam locomotive depots into depots for diesel locomotives; translated articles] Pereustroistvo perovoznykh depo v teplovozye; sbornik perevodnykh statei. Sost. N.N. Kamenev. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1960. 174 p.

(MIRA 14:4)

(Railroads--Roundhouses)

*SHTIVEL'MAN, P.A. Kn*

BALASHEV, P., inzh.; SIMONOVA, R., inzh.; SHTIVEL'MAN, Ya., inzh.

"Finish of knitted fabrics" by S.A. Abramov. Reviewed by P. Balashev,  
R. Simonova, IA. Shtivel'man. Leg. pron. 18 no.4:51-52 Ap '58.  
(MIRA 11:4)

1. Leningradskaya fabrika "Krasnoye znamya" (for Balashev). 2. Chernovitskiy chulochnyy kombinat (for Simonova, Shtivel'man).  
(Knit goods) (Abramov, S.A.)



SHTIVEL'MAN, Ya.Kh., inzh.

Dyeing of nitron yarn. Tekst.prom. 20 no.1:74 Ja '60.  
(MIRA 13:5)

(Dyes and dyeing--Textile fibers, Synthetic)

SHTIVEL'MAN, Ya. Kh., inzh.

Application of ultrasonic waves in knit goods manufacturing. Tekst.  
prom. 20 no. 3:71-72 M- '60. (MIRA 14:5)

(Ultrasonic waves—Industrial applications)  
(Dyes and dyeing—Knit goods)

BIDASYUK, A.G. [Bidasiuk, A.H.]; SHTIVEL'MAN, Ya.Kh.

Experience in the application of ultrasonic waves in the  
Chernovtsy Hosiery Combine. Leh.prom. no.1:23-26 Ja-Mr  
'62. (MIRA 15:9)

(Chernovtsy--Hosiery industry)  
(Ultrasonic waves--Industrial applications)

SHTIVEL'MAN, Ya. Kh.

Reasons for the dispersion of direct dyes. Part 2. Tekst.  
prom. 22 no. 7:46-47 J1 '62. (MIRA 17:1)

1. Nachal'nik khimicheskoy laboratorii Chernovitskogo  
chulochnogo kombinata.

SHTIVEL'MAN, Ya. Kh.

Improving the quality of nylon hosiery. Tekst. prom. 23 no.3:  
54 Mr '63. (MIRA 16:4)

1. Nachal'nik khimicheskoy laboratorii Chernovitskogo chuloch-  
nogo kombinata.

(Chernovitsy—Hosiery, Nylon)



SHTOBEE, V.A., inzh.; TROYANOVSKIY, Yu.V., inzh.

Using the RMTs-2 machine with two cutting units for loosening  
frozen ground. Mekh. stroi. 19 no.9:17 S '62. (MIRA 15:9)  
(Frozen ground) (Earthwork)

SITONE, G. G.

ionov ?

23-69

SITONE, G. Sredniy chisla aktual' noy kontsentratsii ionov vodoroda.  
Investiya Akad. nauk-latv. SSR, 1979, No. 7, S. 93-96. -- Na latysh.  
yaz. -- Razume na rus. yaz.

SO: Letopis, No. 32, 1949.



SHTOBE, G.G.

✓ Nitrogen content in Latvian forest soils. G. Stobe.  
Latvijas PSR Zinātņu Akad. Vēstis, 1953, No. 8, 70-4

(Russian summary). — The ratio C: N was lower in the deeper layers of soils. In neutral clay-bearing soils of deciduous forests the ratio was 15.7 in the top and 4.2-8.6 in the lower levels of the soils. In sandy acidic soils of coniferous forests, the ratio was 24-44. Mixed coniferous-deciduous plantings are recommended.

A. Dravnieks

SHTOBE, G. G.

SHTOBE, G. G. — "Content of Nutritive Substances in Forest Soils of the Latvian SSR."  
Latvian Agricultural Academy, 1953. In Latvian (Dissertation for the Degree of Candidate  
of Agricultural Sciences)

SO: Izvestiya Ak. Nauk Latvyskoy SSR, No. 9, Sept., 1955

PHASE I BOOK EXPLOITATION

SOV/5958

Shtoda, Andrey Vladimirovich, Docent, Candidate of Technical Sciences,  
Stepan Pavlovich Aleshchenko, Aleksandr Yakovlevich Ivanov, Vsevolod  
Semenovich Krasavtsev, Fedor Nikolayevich Morozov, Viktor Anatol'yevich  
Sekistov, and Aleksandr Georgiyevich Shiukov

Konstruktsiya aviatsionnykh gazoturbinnnykh dvigateley (Construction of Aircraft  
Gas-Turbine Engines) Moscow, Voenizdat M-va obor. SSSR, 1961. 411 p.  
Errata slip inserted. No. of copies printed not given.

Ed.: D. A. Novak; Tech. Ed.: R. L. Solomonik.

PURPOSE: This textbook is intended for the engineering, technical, and flying  
personnel of the Soviet Air Force, Civil Air Fleet, and All-Union Voluntary  
Society for the Promotion of the Army, Aviation, and Navy. It may also be  
useful to students at aeronautical schools.

COVERAGE: General information on the construction of Soviet and non-Soviet  
aircraft gas-turbine engines is presented. Soviet engines considered are the

Card 1/1

Construction of Aircraft (Cont.)

SOV/5958

RD-10, RD-20, RD-500, RD-45, VK-1, AI-20, AM-3, and AM-5. The book was written as follows: Foreword, by A. V. Shtoda; Chs. I and VII, by A. G. Shiukov and V. S. Krasavtsev; Ch. II, by V. A. Sekistov; Ch. III, by S. P. Aleshchenko; Chs. IV and V, by F. N. Morozov; Ch. VI, by V. S. Krasavtsev; Ch. VIII, by A. V. Shtoda, V. A. Sekistov, and A. G. Shiukov; and Ch. IX, by A. Ya. Ivanov, all Docents and Candidates of Technical Sciences. The authors thank I. T. Denisov for his assistance. There are 44 references: 23 Soviet (including 2 translations), 17 English, 1 French, 1 German, and 2 unidentified.

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| Ch. I. Compressors         |    |
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Card 2/4

SKUBACHEVSKIY, Gleb Semenovich; TUMANSKIY, S.K., doktor tekhn. nauk, retsenzent; ZHIRITSKIY, G.S., doktor tekhn. nauk prof., retsenzent; STRUNKIN, V.A., kand. tekhn. nauk dots., retsenzent; SHTOEA, A.V., prof., nauchn. red.; POFOV, A.V., red.

[Aircraft gas turbine engines; design and construction of parts] Aviatsionnye gazoturbinnye dvigateli; konstruktsiia i raschet detalei. Izd.2., perer. i dop. Moskva, Mashinostroyeniye, 1965. 451 p. (MIRA 19:1)

1. Chief-correspondent AN SSSR (for Tumanskiy).

SHTODA, A., inzh.-polkovnik, dotsent, kand.tekhn.nauk

Automatic control of turbojet engines. Regulation of fuel supply.  
Av.i kosm. 46 no.6:75-82 Je '63. (MIRA 16:8)  
(Airplanes—Turbojet engines)

DOLGILEVICH, M.I.; SHTODA, G.A.

Humus composition in some soils of the Transcarpathian piedmont.  
Nauch. dokl. vys. shkoly; biol. nauki no.1:212-216 '66.  
(MIRA 19:1)

1. Rekomendovana kafedroy iochvovedeniya i zemledeliya  
Ukrainskogo instituta inzhenerov vodnogo khozyaystva.  
Submitted June 16, 1964.

PLAKSIN, Yakov Grigor'yevich; FLEKKEL' Arkadiy Il'ich; NIKITENKO,  
Vasiliy Rodionovich; NOVIKOV, Grigoriy Porfir'yevich;  
SHTODA, Ivan Ivanovich: MARKOVICH, M.P., kand. tekhn. nauk, dots.,  
ret. tsement; GRIGOR, V.I., dots., retsenzent; MITROKHIN, S.G., re-  
tsement; SLAVIN, D.S., otv. red.; CHERNEGOVA, E.N., red. izd-va;  
MAKSIMOVA, V.V., tekhn. red.  
[Principles of building and mining-engineering structures]  
Osnovy stroitel'nogo dela i gornoinzhenernye sooruzhenia.  
Izd. 2., dop. i perer. [By] I.A.G. Plaksin i dr. Moskva,  
Gosgortekhnizdat, 1963. 463 p. (MIRA 16:12)  
(Building) (Mine buildings)



SHTODA, S.

F.

Burovoy agregat ZIV-150 (Drilling unit, ZIV-150) opisaniye i rukeydstvo po eksploatatsii.  
S. P. Shtoda, G. A. Chechulin. Moskva, Gosgeolizdat: 1962. 118 p. diagrs., tables.  
At head of title: Russia. Ministerstva Geologii.

N/ 5  
741.311  
1L81

ODINTSOV, Georgiy Nikolayevich; SHTODA, Sergey Pavlovich; LYUBARSKIY, Aleksey Leonidovich; BUBNOV, Ye.S., red.; BOROVLEV, V.A., red., SERGEYEVA, N.A., red.izdatel'stva; PEN'KOVA, S.A., tekhn.red.

[The SBU-150-ZIV mobile boring apparatus; description of and directions for operation] Samokhodnaya burovaia ustanovka SBU-150-ZIV; opisanie i rukovodstvo po kspluatatsii. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po geol. i okhrane nedr, 1957. 95 p.(MIRA 10:12)  
(Boring machinery)

SHTOF, I. K.

USSR/Chemical Technology. Chemical Products  
natural gases and petro-  
I-13

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5495

Author: Skripnik, Ye. I., Isagulyants, V. I., Shtof, I. K.

Institution: None

Title: Thermal Stability of Sulfur Compounds of Kuybyshev Oblast Petroleum

Original Publication: Khimiya i tekhnol. topliva, 1956, No 5, 1-8

Abstract: A study has been made of the effect of temperature on thermal stability of sulfur compounds of the 10 principal petroleum varieties of the Kuybyshev Oblast, in which the sulfur content varied from 0.567 to 3.400%, content of dissolved  $H_2S$  was 0.005-0.25%, and elemental S 0.00-0.76%. The apparatus for determination of thermal stability of sulfur compounds in crude petroleum consisted of a 2-liter, round bottom, flask with a 300 mm long packed column. Petroleum was heated to the required temperature (within the 100-400° range, at intervals

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USSR/Chemical Technology. Chemical Products and Their Application -- Treatment of natural gases and petroleum. Motor fuels. Lubricants, I-13

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5495

Abstract: of 50°) and was held at this temperature for 30 minutes. For each temperature a determination was made, of the amount of  $H_2S$  formed, of low boiling mercaptanes and of the amount of S in distillate and residue. It is shown that in all petroleum varieties of Kuybyshev Oblast  $H_2S$  is found in dissolved state, but in the petroleum distillation processes the principal effect is produced by  $H_2S$  of secondary origin. All the investigated varieties of petroleum are characterized by a relatively high thermal stability of sulfur compounds in the temperature range up to 150°. Petroleum varieties of Upper Devonian are characterized by a high thermal stability of sulfur compounds up to 350°. Further increase of the temperature increases the formation of  $H_2S$  by several times, therefore on distillation of petroleum of the Kuybyshev Oblast the maximum permissible temperature at the exit from the atmospheric portion of the furnace must be considered to be 350°. Petroleum varieties of the carboniferous series are characterized by the formation of considerable amounts of  $H_2S$  already at 190-210°. The different behavior of sulfur compounds of

Card 2/3

USSR/Chemical Technology. Chemical Products and Their Application -- Treatment of natural gases and petroleum. Motor fuels. Lubricants, I-13

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5495

Abstract: petroleum varieties of Devonian and carboniferous series indicates the necessity of a separate sorting of these petroleum varieties and to process them according to different technological procedures.

Card 3/3

PONOMAREV, G.V.; SHTOF, M.D.

Effect of the composition of absorbents on the absorption process  
of hydrocarbons. Trudy Giprovoostoknefti no.1:328-343 '58.  
(Absorption) (Hydrocarbons) (MIRA 13:9)

SHTOF, M.D.; DROGIN, I.N.

Creating underground storage in exhausted gas pools containing hydrogen  
sulfide. Gas; prom. 6 no.3:38-41 '61. (MIRA 14:3)  
(Gas, Natural—Storage)

1. The first part of the document is a list of names of people who were involved in the investigation of the assassination of President John F. Kennedy.

2. The second part of the document is a list of names of people who were involved in the investigation of the assassination of President John F. Kennedy.

3. The third part of the document is a list of names of people who were involved in the investigation of the assassination of President John F. Kennedy.



KOSHKIN, Viktor Gavrilovich, kand. tekhn. nauk. ERENBURG, Aleksandr Isaakovich; DANTSIN, Matvey Isaakovich, inzh. SHTOFENMAKHER, Berta Moiseyevna, inzh.; ZOKHIN, Grigoriy Iosifovich

[Polyvinyl chloride linoleum on a felt base used for heat and sound insulation; practices of the Mytishchi Combine for Synthetic Building Materials and Products]  
Polivinilkhlordnyy linoleum na tepl- i zvukoizolyatsion- noi volochnoi osnove; cpyt Mytishchinskogo kombinata sinteticheskikh stroitel'nykh materialov i izdelii. Moskva, Stroizdat, 1964. 16 p. (MIRA 18:5)

1. Zamestitel' direktora Vsesoyuznogo nauchno-issledovatel'skogo instituta novykh stroitel'nykh materialov (for Koshkin). 2. Glavnyy inzhener laboratorii Vsesoyuznogo nauchno-issledovatel'skogo instituta novykh stroitel'nykh materialov (for Erenburg). 3. Rukovoditel' laboratorii Nauchno-issledovatel'skogo instituta zhelezobetonnykh izdeliy, stroitel'nykh i nerudnykh materialov Glavnogo upravleniya promyshlennosti stroitel'nykh materialov i stroitel'nykh detaley (for Dantsin). 4. Glavnyy tekhnolog laboratorii Nauchno-issledovatel'skogo instituta zhelezobetonnykh izdeliy, stroitel'nykh i nerudnykh materialov Glavnogo upravleniya promyshlennosti stroitel'nykh materialov i stroitel'nykh detaley (for Shtofenmakher). 5. Direktor Mytishchinskogo kombinata sinteticheskikh stroitel'nykh materialov i izdeliy (for Zokhin).

SHAPIRO, A. D., SHTOFENMAKHER, N. A.

Determining the properties of liner board. Bum.prom. 35 no.8:19  
Ag '60. (MIRA 13:8)

(Paperboard)

73

SHTOFENMAKHER, S. S.

Consumption of power in calendaring of paper. S. S. SHTOFENMAKHER AND E. A. SHELYAROVA. *Bumazhnyaya Prom.* 11, No. 10, 42-7 (1962).—A discussion. C. H.

ASB-5.1A METALLURGICAL LITERATURE CLASSIFICATION

SHTOFENMAKHER, S. S.

166T71

166T71

USSR/Metals - Testing, Hardness

Jul 50

"Hardness Testing of Case-Hardened Parts With Thin Case," S. S. Shtofenmakher, Cen Design Bu, Main Adm for Motorcycle and Bicycle Production

"Zavod Lab" Vol XVI, No 7, pp 888-889

Suggests using 7.5-kg load in Rockwell hardness tester for determining hardness of very thin case layer, less than 0.10 mm. Discusses relation between penetration depth of diamond and value of load. Gives comparative table of hardness numbers determined on superficial Rockwell tester with

166T71

USSR/Metals - Testing, Hardness (Contd) Jul 50

loads of 15 and 7.5 kg. Recommends method for laboratories in which Vickers testers are not available.

KOVSH, O.; KOPTELOVA, M.; S\*YAKSTE, I.; SHTOFER, G.

Practice in clinical application of the anticoagulant "omefin"  
of the indandione group. Izv. AN Latv. SSR no.10:129-132 '62.  
(MIRA 16:1)

1. Institut organicheskogo sinteza AN Latvyskoy SSR.

(ANTICOAGULANTS(MEDICINE)) (INDANDIONE)

SVIDERSKIY, V.I., doktor fil. nauk; SHTOFF, V.A., kand. fil. nauk;  
IZMAYLOV, S.V., kand. fiz.-mat. nauk; BRANSKIY, V.P., kand.  
fil. nauk; MOSTEPANENKO, M.V., kand. fil. nauk; MELYUKHIN,  
S.T., kand. fil. nauk; MIKHLIN, Ye.I., red.; YELIZAROVA,  
N.A., tekhn. red.

[Philosophical problems in the present-day theory of motion  
in nature]Filosofskie voprosy sovremennogo ucheniia o dvi-  
zhenii v prirode. Leningrad, 1962. 198 p. (MIRA 15:10)

1. Leningrad, Universitet.  
(Science---Philosophy) (Motion)

SHTOGRIN, O.D. [Shtohryn, O.D.]

Drainage network of the cis-Carpathian region during the Pre-  
Quaternary period. Geog. zbir. no.6:38-42 '62. (MIRA 15:9)  
(Carpathian Mountain region--Hydrology)

SHTOGRIN, Ol'ga Dmitriyevna [Shtohryn, O.D.]; GAVRILENKO, K.S.  
[Havrylenko, K.S.], retsenzents; ROMANYUK, A.F., retsenzents;  
PORFIR'YEV, V.B., akademik. nauchnyy red.; SERDYUK, O.P.,  
red.; LISOVETS', O.M. [Lysovets', O.M.], tekhn. red.

[Underground waters of Quaternary sediments in the cis-  
Carpathian region] Pidzemni vody chatvertynnykh vidkladiiv  
Peredkarpattia. Kyiv, Vyd-vo AN URSR, 1963. 137 p.  
(MIRA 16:12)

1. Akademiya nauk Ukr.SSR (for Porfir'yev).  
(Carpathian Mountain region—Water, Underground)



SLIVKA, R.O. [Slyvka, R.O.]; GRITSENKO, M.M. [Hrytsenko, M.M.];  
SHTOGRIN, S.I. [Shtohryn, S.I.]

Geomorphology and melioration problems of the Dnieper-Pripet  
interfluv. Dop. ta pov. L'viv. un. no.7 pt.3: 27-30 '57.  
(MIRA 11:2)  
(Dnieper Lowland--Physical geography)

SHTOGRIN, Ye. D. [Shtohryn, O. D.]

Quaternary glaciation in the cis-Carpathian region and on the  
northern slope of the eastern Carpathians. Geog. zbir.  
no. 4: 185-189 '61. (MIRA 14:8)

(Carpathian Mountain region—Glacial epoch)

YEY, B.N., starshiy nauchnyy sotrudnik; AGADZHANOV, R.A., mladshiy nauchnyy sotrudnik; ALAKHVERDYANTS, S.A., mladshiy nauchnyy sotrudnik; DASHKOVA, Ye.M., mladshiy nauchnyy sotrudnik; MAYOROVA, L.A., mladshiy nauchnyy sotrudnik; SHTOK, E.Sh., mladshiy nauchnyy sotrudnik

Experience in the sanitary and hygienic evaluation of agricultural sweage farms in Ashkhabad. Gig. i san. 25 no. 12:18-20 D '60.

(MIRA 14:2)

1. Iz Ashkhabadskogo instituta epidemiologii i gigiyeny.  
(SOIL MICRO-ORGANISMS) (SEWAGE IRRIGATION)

FEL'DMAN, I.Kh.; Prinimali uchastiye: ZORINA, L.M., studentka; SHTOK,  
E.Sh., student; STEPANOVA, R.I., studentka

Amino sulfides and amino sulfones. Part 22: Reaction of  
sulfonomethylation of amino acids. Zhur.ob.khim. 32 no.4:1043-  
1046 Ap '62. (MIRA 15:4)

1. Leningradskiy khimiko-farmatsevticheskiy institut.  
(Amino acids) (Sulfones)

SHTOK, V.N.

Polyneurites in chronic arsenic poisoning. Sov. med. 24 no. 10:104-110 0 '60. (MIRA 13:12)

1. Iz otdeleniya nervnykh bolezney (zav. S.A. Kogan, nauchnyy rukovoditel' raboty - prof. Kafedry nervnykh bolezney TSentral'nogo instituta usovershenstvovaniya vrachey M.B. TSuker) Moskovskoy gorodskoy klinicheskoy ordena Lenina bol'nitsy imeni S.P. Botkina (glavnyy vrach - prof. A.N. Shabanov).  
(NEURITIS) (ARSENIC-TOXICOLOGY)

SHTOK, V.N.

Dehydrating action of urea. Vop.neirokhir. no.2:43-48 '62.  
(MIRA 15:3)

(UREA)

(BODY FLUIDS---PRESSURE)

SHTOK, V.N. (Moskva)

Stenosis and thrombosis of the extracranial large vessels of the  
head. Klin.med. no.9:17-23 '62. (MIRA 15:12)

1. Iz nevrologicheskogo otdeleniya Moskovskoy klinicheskoy ordena  
Lenina bol'nitsy imeni S.P. Botkina (glavnyy vrach - dotsent Yu.G.  
Antonov).

(THROMBOSIS) (HEAD--BLOOD SUPPLY)

STOK, V.N. [Shtok, V.N.] (Moskva)

Stenosis and thrombosis of the major extracranial blood vessels  
of the head. Cas. lek. cesk. 102 no.42:193-197 18 0 '63.



SHTOK, V.N.

"Cerebral infarction: the role of stenosis of the extra-  
cranial cerebral arteries" by P.O. Yates, E. Hutchinson.  
Reviewed by V.N. Shtok. Zhur. nevr. i psikh. 64 no.2:309-310  
'64. (MIRA 17:5)

KANDEL', E.I.; SHTOK, V.N.

International Symposium on Stereotaxic Neurosurgery. Vop. neuro-  
khi, 28 no.1:61-62 Ja-F '64. (MIRA 18:1)

SHTOK, V.N.

Dehydrating effect of mannitol. Vop. neurokhir. 28 no.6:48-50  
N-D '64. (MIRA 18:4)

| 1ST AND 2ND ORDERS  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3RD AND 4TH ORDERS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| W.E.  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Miscellaneous      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <p>1112. AN ASYMPTOTIC METHOD FOR SOLVING<br/>CERTAIN CLASSES OF DIFFERENTIAL EQUA-<br/>TIONS HAVING VARIABLE COEFFICIENTS.—<br/>I. Shchekalo (Comptes Rendus (Doklady)<br/>de l'Ac. des Sci. de l'URSS, 20th Jan 1945,<br/>Vol. 46, No. 2, pp. 51-52; in French)</p> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Shtokalo, I.

Shtokalo, I. On the theory of linear differential equations with quasi periodic coefficients. Akad. Nauk Ukrain. RSR. Zbirnik Prac' Inst. Mat. 1946, no. 8, 163-176 (1947). (Ukrainian. Russian and English summaries)  
 The author considers the  $n$ th order differential equation  $x^{(n)} + a_{n-1}(t)x^{(n-1)} + \dots + a_0(t)x = 0$ , where  $a_k(t) = a_k^0 + \epsilon f_k(t)$ , where  $a_k^0$  is a constant and  $f_k(t)$  are of the form  $\sum A_{\nu}^{(k)} e^{i\nu t}$  summed over a finite range of  $\nu$ . The equation with  $\epsilon = 0$  is assumed to have characteristic roots with negative real parts which are all distinct. Formal series solutions are obtained and their asymptotic character demonstrated over  $0 \leq t \leq \infty$ . The formal solutions are of the form  $\xi(t)e^{\rho t}$ , where  $\rho = \rho_0 + \epsilon \rho_1 + \epsilon^2 \rho_2 + \dots$  and  $\xi(t) = 1 + \epsilon \xi_1(t) + \epsilon^2 \xi_2(t) + \dots$  where the  $\rho_i$  are constants and the  $\xi_i(t)$  are of the same general form as the  $f_k(t)$ . N. Levinson (Cambridge, Mass.)

Source: Mathematical Reviews.

Vol

12 No. 5

*Shtokalo, J.*

Shtokalo, J. A stability and instability criteria for solutions of linear differential equations with quasi-periodical coefficients. *Rev. Math. [Mat. Sbornik]* N.S. 19(61), 263-286 (1946). (Russian. English summary)

The author establishes criteria for the boundedness as  $t \rightarrow +\infty$  of solutions of systems of differential equations of the form  $dy/dt = (A + \epsilon B(t))y$ , where  $A$  is a constant matrix, the elements of  $B$  are trigonometric sums, not necessarily finite, of the form  $\sum_{k=1}^n a_k e^{i\lambda_k t}$ , where the  $\lambda_k$  need not be mutually commensurable and  $\epsilon$  is a small parameter. The criteria are obtained by considering the formal transformation of the equation into an equation with constant matrix and applying the Hurwitz determinantal criteria to the characteristic equation of the transformed equation. Some practical examples are given showing that these criteria may be readily applied to any particular problem.

*R. Bellman.*

Source: *Mathematical Reviews,*

Vol 8 No. 6

SHTOKALO, I.

Gurvits' determinants and application of the stability criterion  
to the solution of some linear differential equations with variable  
coefficients. Nauk.zap.Kiev.un. 7 no.4:71-83 '48 (MLRA 10:5)  
(Differential equations, Linear)

1

SHTOKALO, I.

~~Linear differential equations with quasi-periodic coefficients.~~  
Nauk.zap.Kiev.un. 7 no.4:85-100 '48 (MLRA 10:5)  
(Differential equations, Linear)



SHTOKALO, I.Z.

Theory of the generalized symbolic image for solutions of linear  
differential equations with quasi-periodic coefficients. Zbir.prats'  
Inst.mat.AN URSR no.11:43-59 '48. (MLRA 9:9)  
(Differential equations, Linear)

SHTOKALO, I.Z.

Generalization of the basic formula for the symbolic method. Ukr.  
mat.zhur. [1] no.3:51-59 '49. (MLRA 7:10)  
(Differential equations, Linear)

SHTOKALO, I.Z.

Generalization studies in the generalized theory of partial differential equations. Scientific works, pedagogical activities, and biography of IU.V.Pfeiffer, 1872-1946. Nauk.zap.Kiev.un.8 no.4:19-24 '49. (MLRA 9:10)  
(Differential equations, Partial)(Pfeiffer, IUrii Vasyl'ovych, 1872-1946)

RUTYTS'KYY, Ya.B.; SHTOKALO, Y.Z., diysnyy chlen.

On one non-linear operator acting in Orlich spaces. Dop. AN URSR no.3:161-166  
'52. (MIRA 6:9)

1. Akademiya nauk Ukrayins'koyi RSR (for Shtokalo). 2. Kyivskiy derzhavnyy  
universitet im. T.H.Shevchenka (for Rutyts'kyy). (Spaces, Generalized)

CHTAKA-1-1-

Math 2

Mathematical Reviews  
Vol. 15 No. 1  
Jan. 1954  
Analysis

7-13-54  
LL

✓ Štokalo, I. Z. On the form of solutions of certain classes of linear differential equations with variable coefficients. Ukrain. Mat. Žurnal 4, 36-48 (1952). (Russian)

Under certain conditions the vector differential equation  $x' - A(t)x = ce^{pt}$  has a solution  $x = \omega(t, p)e^{pt}$  where  $|\omega(t, p)|$  is bounded in  $t$ ,  $-\infty < t < \infty$ , and analytic in  $p$  for  $|\operatorname{Re} p| \geq L$ . Here  $c$  is a constant vector. In particular, if the matrix  $A(t)$  satisfies  $|A(t)| \leq N$ , then an  $L$  can be found depending on  $N$  so that  $\omega$  exists. The author then concerns himself with the matrix equation  $x' - A(t)x = F(t)$  where  $F$  is a matrix. If  $\Psi(p) = \int_0^\infty e^{-pt} F(t) dt$  a solution of the form

$$x(t) = \frac{1}{2\pi i} \int_{\sigma-i\infty}^{\sigma+i\infty} e^{pt} \omega(t, p) \Psi(p) dp$$

is shown, under certain conditions, to exist.

N. Levinson (Cambridge, Mass.).

SHTOKALO, I.Z.

Mykola Mykolaievych Boholiubov. Nauk.zap.Kiev.un.11 no.7:117-127 '52.

(MLRA 9:10)

(Boholiubov, Mykola Mykolaiovych, 1909-)(Bibliography--Matematika)

SHTOKALO, Y. Z.; IVASYUTA, M. K.

Scientific work of institutes of the Lvov branch of the Academy of  
Sciences of the Ukrainian S.S.R. in 1954. Visnyk AN URSR 26 no.7:  
16-25 J1'55. (MLRA 8:10)

(Academy of sciences of the Ukrainian S.S.R.)

SHTOKALO, I.Z

Achievements in the field of mathematics at Kiev University  
during the Soviet period. Nauk. zap. Kyiv. un. 16 no.16:5-28 '57.  
(MIRA 13:3)

(Kiev--Mathematics--Study and teaching)



SHTOKALO, Iosif Zakharovich: POGREBISSEKIY, I.B. [Pogrebis'kyi, I.B.], red.;  
REMENNIIK, T.K., red. izd-va; MIL'OKHIN, I.D., tekhn. red.

[Outline of the development of mathematics in the Ukraine during  
the 40 years of the Soviet regime] Narys rozvytku matematyky na  
Ukraini za 40 rokiv Radians'koi vlady. Kyiv, Vyd-vo Akad. nauk  
URSR, 1958. 81 p. (MIRA 11:12)

(Ukraine--Mathematics)

OSTROGRADSKIY, Mikhail Vasil'yevich [deceased]; SHTOKALO, I.Z., akademik, otv. red.; BOGOLYUBOV, N.N., akademik, otv. red. toma; GNEDENKO, B.V., akademik, red.; ISHLINSKIY, A.Ya., akademik, red.; REMEZ, Ye.Ya., red.; SAVIN, G.N., akademik, red.; SOKOLOV, Yu.D., red.; SMIRNOV, V.I., akademik, red.; YUSHKEVICH, A.P., prof., red.; POGREBYSSKIY, I.B., dotsent, red.; SHTELIK, V.G., red. ind-va; RAKHLINA, N.P., tekhn. red.

[Collected works in three volumes] Polnoe sobranie trudov v trekh tomakh. Kiev, Izd-vo Akad.nauk USSR. Vol.1. 1959. 310 p.  
(MIRA 12:8)

1. AN USSR (for Shtokalo, Gnedenko, Ishlinskiy, Savin). 2. Chlen-korrespondent AN USSR (for Remez, Sokolov).  
(Science)

PHASE I BOOK EXPLOITATION

SOV/4905

Shtokalo, Iosif Zakharovich

Lineynyye differentsial'nyye uravneniya s peremennymi  
koeffitsientami; asimptoticheskiye metody i kriterii  
ustoychivosti i neustoychivosti resheniy (Linear Differential  
Equations with Variable Coefficients; Asymptotic Methods and  
the Stability and Instability Criteria of Solutions) Kiyev,  
Izd-vo AN UkrSSR, 1960. 78 p. Errata slip inserted. 3,000  
copies printed.

Sponsoring Agency: Akademiya nauk Ukrainskoy SSR. Institut  
matematiki.

Resp. Ed.: Yu. A. Mitropol'skiy, Corresponding Member, Academy of  
Sciences UkrSSR. Ed. of Publishing House: I. V. Kisina; Tech.  
Ed.: R. A. Buniy.

Card ~~1/7~~

Linear Differential Equations (Cont.)

SOV/4905

PURPOSE: This book is intended for scientific workers, engineers, aspirants, and students in advanced courses at universities.

COVERAGE: The book presents investigations of linear differential equations with variable coefficients. According to the author, the highly important problem of the stability and instability of solutions of equations with quasi-periodic coefficients is solved in this book. Criteria obtained by him are of great importance for the development of the theory of the equations considered in this book, and for the applications to various mechanical and technical problems. Equations, systems of equations, and the asymptotic character of the approximate solutions of such equations and systems of equations are discussed in detail. Stability and instability criteria of the solutions of the examined systems of equations are also considered. Practical applications of the results obtained are included. N. M. Krylov and N. N. Bogolyubov, authors in related fields of science, are mentioned. There are 82

Card 2/7

Linear Differential Equations (Cont.)

SOV/4905

references: 68 Soviet, 6 Italian, 4 French, 2 English, and  
2 German.

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~~Card 377~~

GUDYMENKO, F.S. [Hudymenko, F.S.]; SHTOKALO, I.Z., otv.red.

[Russian-Ukrainian mathematical dictionary; 12,000 terms]  
Rosii's'ko-ukrains'kyi matematychnyi slovnik; 12000 terminiv.  
Kyiv, Vyd.Akad.nauk URSR, 1960. 162 p.

(MIRA 14:4)

(Russian language--Dictionaries--Ukrainian)  
(Mathematics--Dictionaries)

SHTOKALO, I.Z.; PYASKOVSKIY, B.V. [Piaskovs'kyi, B.V.]; RAVIKOVICH, S.D.  
[Ravikovych, S.D.]

"Lenin and modern physics" by V.Hott. Reviewed by I.Z.Shtokalo,  
B.V.Piaskovs'kyi, S.B.Ravikovych. Dop.AN URSR no.11:1572-1575 '60.  
(MIRA 13:11)

(Physics--Philosophy) (Lenin, Vladimir Il'ich, 1870-1924)  
(Hott, V.)

SHTOKALO, I.Z. (Kiyev)

On the calculus of operations [with summary in English]. Ukr.  
mat.zhur. 12 no.1:72-78 '60.

(MIRA 13:10)

(Calculus of operations)



SHTOKALO, I.Z., adademik; MITROPOL'SKIY, Yu.A.; FIL'CHAKOV, P.F., doktor fiz-  
mat. nauk

Mikhail Alekseevich Laverent'ev; on his 60th birthday. Ukr. mat. zhur. 12  
no.4:490-491 '60. (MIRA 14:3)

1. AN USSR (for Shtokalo). 2. Chlen-korrespondent AN USSR (for  
Mitropol'skiy).

(Lavrent'ev, Mikhail Alekseevich, 1900- )

SHTOKALO, Iosif Zakharovich; MITROPOL'SKIY, Yu.A., akad., oty. red.; KISI-  
NA, I.V., red. izd-vá; LISOVETS, A.M., tekhn. red.

[Operational methods and their development in the theory of linear differential equations with variable coefficients] Operatsionnye metody i ikh razvitie v teorii lineinykh differentsial'nykh uravnenii s peremennymi koeffitsientami. Kiev, Izd-vo Akad. nauk USSR, 1961. 127 p. (MIRA 14:11)

1. AN USSR (for Mitropol'skiy).  
(Differential equations, Linear) (Calculus of operations)

OSTROGRADSKIY, Mikhail Vasil'yevich, matematik, mekhanik; SHTOKALO, I.Z., akademik, otv. red.; GNEDENKO, B.V., akademik, zam. otv. red.; ISHLINSKIY, A.Yu., akademik, zam. otv. red.; BOGOLYUBOV, N.N., akademik, red.; REMEZ, Ye.Ya., red.; SAVIN, G.N., akademik, red.; SOKOLOV, Yu.D., red.; SMIRNOV, V.I., akademik, red.; YUSHKEVICH, A.P., prof., red.; POGREBYSSKIY, I.B., dotsent, red.; SHTELIK, V.G., red. izd-va; RAKHLINA, N.P., tekhn. red.

[Complete works in three volumes] Polnoe sobranie trudov v trekh tomakh. Kiev, Izd-vo Akad. nauk USSR. Vol.2. 1961. 338 p.

(MIRA 14:11)

1. AN USSR (for Shtokalo, Gnedenko, Ishlinskiy). 2. Chlen-korrespondent AN USSR (for Remez, Sokolov).  
(Mechanics, Analytic)

OSTROGRADSKIY, Mikhail Vasil'yevich [deceased]; SHTOKALO, I.Z., akademik, otv.red.; GNEDENKO, B.V., akademik, otv.red.toma; ISHLINSKIY, A.Yu., akademik, zamestitel' otv.red.; BOGOLYUBOV, N.N., akademik, red.; REMEZ, Ye.Ya., otv.red.toma; SAVIN, G.N., akademik, red.; SOKOLOV, Yu.D., red.; SMIRNOV, V.I., akademik, red.; YUSHKEVICH, A.P., prof., red.; POGREBYSSKIY, I.B., dotsent, red.; SHTELIK, V.G., red.izd-va; RAKHLINA, N.P., tekhn.red.

[Complete collection of works in three volumes] Polnoe sobranie trudov v trekh tomakh. Kiev, Izd-vo Akad.nauk USSR. Vol.3. 1961. 395 p. (MIRA 15:2)

1. AN USSR (for Shtokalo, Gnedenko, Savin). 2. Chleny-korrespondenty AN USSR (for Remez, Sokolov).  
(Mathematics)  
(Ostrogradskii, Mikhail Vasil'evich, 1801-1861)

BOGOLYUBOV, N.N., red.; GNEDENKO, B.V., red.; POGREBYSSKIY, I.B., red.;  
REMEZ, Ye.Ya., red.; SMIRNOV, V.I., red.; SOKOLOV, Yu.D., red.;  
SHTOKALO, I.Z., red.; YUSHKEVICH, A.P., red.; SHIROKOVA, S.A., red.;  
YERMAKOVA, Ye.A., tekhn. red.

[Pedagogical heritage and documents on the life and work of Mikhail Vasil'evich Ostrogradskii (1.1.1862 - 1.1.1962)] Mikhail Vasil'evich Ostrogradskii, 1 ianvaria 1862 - 1 ianvaria 1962; pedagogicheskoe nasledie, dokumenty o zhizni i deiatel'nosti. Pod red. I.B. Pogrebysskogo i A.P. Ushkevicha. Moskva, Gos. izd-vo fiziko-matem. lit-ry, 1961. 397 p. (MIRA 15:1)

1. Akademiya nauk SSSR. Institut matematiki.  
(Ostrogradskii, Mikhail Vasil'evich, 1801-1861)

SHTOKALO, I.Z.

"Development of mechanics in the Ukraine during Soviet rule"  
by G.M.Savin [**Savin**, H.M.], V.V.Georgievs'kaia [Heorhievs'ka, V.V.].  
Reviewed by I.Z.Shtokalo. Prykl.mekh. 8 no.2:227 '62.

(MIRA 15:3)

(Ukraine--Mechanics) (Savin, G.M.) (Georgievs'kaia, V.V.)

BOGOLYUBOV, Aleksey Nikolayevich; SHTOKALO, I.Z., akademik; otv.  
red.; ORLIK, Ye.L., red.

[History of mechanical engineering] Istoriia mekhaniki  
mashin. Kiev, Naukovadumka, 1964. 460 p. (MIF: 17:12)

1. Akademiya nauk Ukr.SSR (for Shtokalo).

SHTOKALO, I.Z., akademik, red.; BOGOLYUBOV, N.N., akademik, red.;  
GLUSHKOV, V.M., akademik, red.; AKHIEZER, A.I., akademik,  
red.; PARASYUK, O.S., akademik, red.; KOPNIN, P.V., doktor  
filosofskikh nauk, red.; VIL'NITSKIY, M.B., kand. fil. nauk,  
red.; DYSHLEVYY, P.S., kand. fil. nauk, red.; KUCHER, V.I.,  
red.

[Philosophical questions of modern physics; materials] Fi-  
losofskie voprosy sovremennoi fiziki: materialy. Kiev, Na-  
ukova dumka, 1964. 325 p. (MIRA 17:10)

1. Respublikanskoye soveshchaniye po filosofskim voprosam  
fiziki elementarnykh chastits i polya. Kiev, 1962. 2. Vitse-  
prezident AN Ukr.SSR (for Glushkov). 3. Ukrainskiy fiziko-  
tekhnicheskii institut (for Akhiezer). 4. Institut mate-  
matiki AN Ukr.SSR (for Parasyuk). 5. Institut filosofii AN  
Ukr.SSR (for Dyshlevyy, Kopnin).



SHTOKALO, I.Z.; KALUZHININ, L.A.; BLAGOVESHCHENSKIY, Yu.V.; BOGOLYUBOV, A.N.

Vladimir Petrovich Vel'min, 1885-; on his 80th birthday.  
Ukt. mat. zhur. 17 no.5:137-138 '65.

(MIRA 18:12)

SHTOKALO, M.I.

CH <sup>✓</sup> Coprecipitation in quantitative analysis. III. Study of the coprecipitation of antimony with manganese dioxide in the presence of radioactive indicators. A. K. Babko and M. I. Shtokalo, *Zavodskaya Lab.* 21, 787-79 (1955); cf. *ibid.* 19, No. 4 (1953).—Sb sulfate and nitrate solns. are in a metastable condition, and Sb ppts. quantitatively if given sufficient time (2-6 months from a 2N soln.). Filter-paper pulp carries down but little of the Sb which shows that MnO<sub>2</sub> acts as a copptn. agent, and does not simply entrain the Sb. In the tests, a dil. soln. of Sb<sup>3+</sup> was added to the Sb in soln., and the pptn. was studied by the radioactivity of the soln. Comparison was made with several other copptg. agents, such as Fe(OH)<sub>3</sub> pptd. with NH<sub>4</sub>OH and pptd. with Na<sub>2</sub>CO<sub>3</sub>; with NaOAc, and with MnO<sub>2</sub>; 4, 0.7, 2, and 0%, resp., of the Sb were found with these copptants in the absence of Cu, and 3.0, 0.2, 6, and 2% in the presence of as much Cu in soln. as is usually found during the pptn. Of the other ions in soln., P inhibited copptn. and a pH 2-9 favored it. MnO<sub>2</sub> pptd. Sb equally well whether freshly formed in the soln. or added to the soln. even in the form of pyrolusite. By use of tagged Zn atoms, the formation of a definite Zn-Cr compound (as hydroxides) was established during their copptn. but no compd. formation was discovered between Sb and MnO<sub>2</sub>. W. M. Sternberg

IRM

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①

MS

Inst. Gen. & Inorg. Chem, AS Ukr SSR

SHTOKALO, M.I., Cand Chem Sci ~~92~~ — (diss) "Study of certain processes of co-precipitation in quantitative analysis." Kiev, 1958, 16 pp with illustrations (Acad Sci UkSSR. Inst of ~~General~~ General and Inorganic Chemistry) 150 copies (KL, 39-58, 107)

- 13 -

AUTHORS: Babko, A.K., Shtokalo, M.I.

32-24-6-4/44

TITLE: Co-Precipitation in Quantitative Analysis (Soosazhdeniye v kolichestvennom analize), Communication V (Soobshcheniye V), The Influence Exercised by Complexon Upon the Precipitation of Zirconium Phosphate (Vliyaniye kompleksona na osazhdeniye fosfata tsirkoniya)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 6, pp 674-677 (USSR)

ABSTRACT: "Hidden precipitants" are frequently used for the separation of numerous elements, because the forming of crystals is retarded by a formation in stages of the precipitation anions, so that, as e.g., in the presence of pyridine, denser sulfide precipitations are obtained. In the present paper the influence exercised by ethylene-diamino-tetraacetic acid upon some processes of precipitation is investigated, because a sharp modification of the form of precipitation as well as a decrease of co-precipitation was observed. Data concerning the separation of zirconium and titanium by means of the phosphate method are given. Zirconium was transferred before precipitation with trilon in a weakly acid medium into a complex, and after precipitation it was found that the precipitation

Card 1/2

Co-Precipitation in Quantitative Analysis. Communication V.  
The Influence Exercised by Complexon Upon the Precipitation  
of Zirconium Phosphate

32-24-6-4/44

obtained was much more dense and more easily filtratable than that to which no trilon was added, and also electromicroscopic photos showed a difference. The observation made to the effect that precipitation comes to a standstill if acidity increases is explained by the presence of two forms of ions, viz., of zirconyl  $ZrO^{+2}$  and zirconium  $Zr^{+4}$ . From the method of operation described it follows that for the quantitative precipitation of zirconium phosphate from the trilon complex acidification of up to 3-4 n must be carried out. The experimental separation of zirconium and titanium showed that, in the presence of trilon the co-precipitation of titanium is decreased by more than ten times its amount if trilon is present in the case of phosphate precipitation, whereas, if triethylphosphate is used as a "hidden precipitant" no positive results were obtained, which is explained by the decomposition of hydrogen peroxide after long boiling. There are 1 figure, 1 table, and 5 references, 3 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk USSR  
(Institute of General and Anorganic Chemistry, AS Ukrainian SSR)

Card 2/2

1. Zirconium phosphate--Precipitation
2. Zirconium---Separation
3. Titanium--Separation
4. Ethylenediamino tetracetic acids--Chemical effects

5(2)

SOV/21-59-7-16/25

AUTHOR: Babko, A.V., Member of the AS UkrSSR and Shtokalo, M.I.

TITLE: Coprecipitation of  $\text{Fe}^{3+}$  and  $\text{MnO}_4^-$  Ions with Slightly Soluble Sulfates

PERIODICAL: Dopovidi Akademii Nauk Ukrain's'koi RSR, 1959, Nr 7, pp 766-768 (UkrSSR)

ABSTRACT: The authors studied the coprecipitation of permanganate and iron with precipitates of barium, lead, strontium, and calcium sulfates. It is shown that the coprecipitation of permanganate decreases slightly from barium to lead and strontium, and sharply decreases when passing on to  $\text{CaSO}_4$ . A comparison of the degree of coprecipitation of permanganate with the parameters of the crystal lattices of these sulfates confirms the fact that the coprecipitation of  $\text{KMnO}_4$  is mainly due to the formation of solid solutions.<sup>4</sup> The coprecipitation of iron is of different character (inner adsorption) and is linked rather with the form of the crystals. There are 2 tables and 3

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SOV/21-59-7-16/25

Coprecipitation of  $\text{Fe}^{3+}$  and  $\text{MnO}_4^-$  Ions with Slightly Soluble Sulfates

references, 1 of which is Soviet and 2 German

ASSOCIATION: Instytut zahal'noy ta neorhanichnoy khimiyi AN URSR  
(Institute of General and Inorganic Chemistry AS  
UkrSSR)

SUBMITTED: April 7, 1959

Card 2/2

5(2)

AUTHORS:

Babko, A. K., Shtekalo, M. I.

SOV/32-25-7-2/50

TITLE:

Co-precipitation in Quantitative Analysis (Sosazhdeniye v kolichestvennom analize). Investigation of Crystal Growth of Barium Sulfate (Izucheniye rosta kristallov sernokislogo bariya)

PERIODICAL:

Zavodskaya laboratoriya, 1959, Vol 25, Nr 7, pp 779-782 (USSR)

ABSTRACT:

In spite of investigations hitherto carried out on crystallization of barium sulfate (I) the problem is not solved whether the growth process takes place in an agglomeration of cross-shaped particles, an enlargement of "snow flakes" while retaining the shape or by an aggregate of the small particles. In the present case various crystallization stages of (I) were investigated by the aid of an electron microscope thus employing a different preparation technique. It was found that two kinds of crystal growth of the primary (I) crystals exist; the first variation occurs by the continuation of the reaction of

$Ba^{2+}$  and  $SO_4^{2-}$ , whereas aging causes completely different alterations. In both cases larger crystals with a regular

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Co-precipitation in Quantitative Analysis.  
Investigation of Crystal Growth of Barium Sulfate

SOV/32-25-7-2/50

shape are formed, in the case of aging, however, it takes place by decomposition of the sharp edges of individual cross-shaped double crystals. Some microphotographs of crystals are given (Figs 1-5). In order to determine the connection between the shape of particles of the solid phase and its absorptive power, co-precipitations of (I) with KCl and  $\text{KMnO}_4$  were carried out.

It was found that in both cases co-precipitation is considerably higher if crystals are formed with a ramified surface. There are 5 figures and 7 references, 3 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk USSR  
(Institute for General and Inorganic Chemistry of the Academy of Sciences of the UkrSSR)

Card 2/2

BABKO, A.K. akademik; SHTOKALO, M.I.

Reaction of niobium with xyleneol orange. Dop. AN URSSR no.9:1179-  
1182 '61. (MIRA 14:11)

1. Institut obshchey i neorganicheskoy khimii AN USSR.
2. AN USSR (for Babko).  
    (Niobium)  
    (Xyleneol)

BABKO, A.K.; SHTOKALO, M.I.

Study of the complexing and relative stability of certain  
zirconium complexes by use of the metal-indicator method.  
Ukr.khim.zhur. 27 no.5:566-574 '61. (MIRA 14:9)

1. Institut obshchey i neorganicheskoy khimii AN USSR.  
(Zirconium compounds)

S/075/62/017/009/002/006  
E071/E436

AUTHORS: Babko, A.K., Shtokalo, M.I.  
TITLE: Photometric determination of niobium by means of  
xylenol orange  
PERIODICAL: Zhurnal analiticheskoy khimii, v.17, no.9, 1962,  
1068-1071

TEXT: When studying the action of metallochromate indicators on salts of highly covalent metals, the authors noticed that xylenol orange ([3:3'-bis N:N-di-(carboxymethyl)-aminomethyl]-o-cresolsulphonaphthalein), further designated XO, in an acid medium gives a weak reaction with niobium. Oxalic acid, tartaric acid and other similar substances intensify the ability of niobium to react with xylenol orange forming intensely coloured (red) complexes. On the above basis the authors developed a photometric method of determining niobium in the presence of tartaric acid. The optimum conditions are: pH 2 to 3, the ratio of niobium to tartaric acid = 1:30. The composition of niobium xylenol orange complex was determined by the method of isomolar series as  $Nb(XO)_2$ . The molar extinction coefficient of Card 1/2

BABKO, A. K.; SHTOKALO, M. I.

Application of the method of isomolar series and the method of equilibrium displacement using metal indicators for determining the composition of complexes. Ukr. khim. zhur. 28 no.3:293-301 '62. (MIRA 15:10)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

(Complex compounds)

SHTOKALO, M. I.

Study of some titanium complexes by the metal indicator method.  
Ukr. khim. zhur. 28 no.5:555-561 '62. (MIRA 15:10)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

(Titanium compounds)

BABKO, A.K.; SHTOKALO, M.I.

Complex formation in the zirconium - diantipyrylmethane, system.  
Zhur.neorg.khim. 8 no.5:1088-1092 My '63. (MIRA 16:5)  
(Zirconium compounds)

BABKO, A.K.; SHTOKALO, M.I.

Determination of the relative stability of certain niobium  
complexes by the metal-indicator method. Ukr. khim. zhur. 29  
no.10:1079-1082 '63. (MIRA 17:1)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.



BABKO, A.K., akademik; SHITOKALO, M.I.

Formation of the ternary complex in the system iron -  
xylenol orange - fluoride. Dop. AN URSR no.8:1077-  
1080 '64. (MIRA 17:8)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.
2. AN UkrSSR (for Babko).

ACCESSION NR: AP4021983

S/0073/64/030/002/0220/0223

AUTHOR: Babko, A. K.; Shtokalo, M. I.

TITLE: Investigation of reagents for the colorimetric determination of tantalum

SOURCE: Ukrainskiy khimicheskii zhurnal, v. 30, no. 2, 1964, 220-223

TOPIC TAGS: tantalum, niobium, titanium, colorimetric analysis, color reagent, hematoxylin, pyrocatechol violet, phenylfluorin, arsenazo I, eriochromcyanin, acid chrome blue, morin, colorimetric determination, reagent specificity

ABSTRACT: A group of color reagents found earlier (Ukr, khim. zh 29, 963 (1963)) to be suitable for identifying tantalum according to their spectrophotometric characteristics are now further investigated to determine their specificity for Ta and Nb, and to determine the optimum pH. The color intensity of Ta, Nb, and Ti complexes with hematoxylin (I), pyrocatechol violet (II), phenylfluorin (III), arsenazo I (IV), eriochromcyanin (V), acid chrome blue (VI) and morin (VII) at pH 0-5, and of I, IV and VII in 5-10 NHCl solutions was determined. Hematoxylin, pyrocatechol violet and morin are the most valuable reagents for determining Ta and Nb in the presence of Ti. Hematoxylin and morin may be used to

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ACCESSION NR: AP4021983

determine total Ta and Nb. Additional work with pyrocatechol violet (PKV) shows that it may be used for the colorimetric determination of Ta in the presence of Nb. In the presence of ethylenediaminetetraacetic acid its coloration is intensified, distinguishing Ta from Nb; the optimum density of the Ta-PKV complex follows Beer's law in a wide concentration range. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk UkrSSR  
(Institute of General and Inorganic Chemistry, Academy of Sciences, UkrSSR)

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NO REF SOV: 003

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Card 2/2

BABKO, A.S.; SHCHERBA, V.I.

Study of the relative stability of some tantalum complexes  
by means of the metal indicator method. Ukr. khim. nauk. 30  
no. 9:972-979 1964. (NAPA 17:19)

1, ustoiichivost' i neorganicheskiy sintez. Ukr. khim. nauk.